R. Michael Turnnspeed, Director

ALLEN BIAGGI. Administrator

(775) 687-4670
TDD 687-4678

Administration
Water Pollution Control
Facsimile 687-5856
Mining Regulations & Reclamation
Facsimile 684-5259

State of Nevada
KENNY C. GUINN
Governor

Waste Management
Corrective Actions
Federal Facilities

Air Quality
Water Quality Planning

Facsimile 687-6396

DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES

DIVISION OF ENVIRONMENTAL PROTECTION

333 W. Nye Lane, Room 138
Carson City, Nevada 89706

February 18, 2003

Mr. Dave McCarthy
Atlantic Richfield Company
307 E Park Ave.
Anaconda, Montana 59711

SUBJECT: **Draft Final Cover Materials Work Plan**

Dear Mr. McCarthy:

The Nevada Division of Environmental Protection (NDEP) has received and evaluated the **Draft Cover Materials Work Plan,** dated September 27, 2002, regarding the continued environmental investigation of the Yerington Mine, located in Lyon County near Yerington Nevada. This office provides the following comments from NDEP, EPA, BLM, U.S. Fish and Wildlife and other technical representatives of the Yerington Technical Work Group (YTWG).

NDEP Comments:

You are encouraged to review and site other pertinent information from the Lyon County Soil Surveys regarding engineering properties of the potential cover materials areas. This information if incorporated, may assist in documenting the appropriateness of available cover material and assist in engineering interpretations of soil classifications, permeability, shrink swell potential, bearing capacity, cover material suitability and other pertinent information.

EPA Comments:

Comments on the "Response to Comments"

Response to EPA Comment 1: Proposed cover materials should be tested for leaching properties and permeability under likely compaction efforts. Also, the Draft Final Cover Materials Work Plan suggests the "potential use of cover materials from the Waste Rock Areas, Tailings Areas, and Arimetco Heap Leach Pads" (page 1). These are not naturally exposed surface materials so their potential to release COCs via leaching or surface runoff, should be determined.

Comments on the "Draft Final Cover Materials Work Plan"

Page 8. Section 2.0 Note that potential cover materials that are not naturally exposed in the area should be assessed to determine if they will release COCs to leachate or runoff.

Additional comments from EPA's Environmental Radiation Expert are included in an attachment.

U.S. Fish and Wildlife Comments:

In section 1.3, Data Quality Objectives, in the last paragraph of page 5, the document states "The potential transport of these native alluvial materials for use at the mine site is not expected to modify their geochemical characteristics. Therefore, no increase in human health or ecological risk is anticipated." We agree with the statement; however, this may not apply to the use of materials from other sources such as waste rock and tailings. A statement should be added to acknowledge this possibility.

The table on the top of page 7 lists the number of proposed sample locations. The off-site areas list the maximum number of locations. It would also be helpful to indicate the minimum number of locations for these areas. Information should also be provided in Figure 2 on other potential sampling locations for off-site areas as only three and six sites are identified for Arimetco and Bureau of Land Management lands, respectively. If this is not feasible, information should be provided in the text on the rationale for selection for the additional locations. Other discrepancies appear to be present between this table and Figure 2. For example, Figure 2 shows three locations for the Sulfide Ore Waste Rock Area, whereas the table lists only two sites. The table indicates four sites for the Phase III South Heap Leach pad, but only three sites are apparent on Figure 2. Also, is there overlap between sites for the W-3 Waste Rock Area and the Phase II Heap Leach Pad?

The first sentence in the last paragraph on page 7 states, “The geochemistry of the alluvial materials will be evaluated for their potential to pose a human health or ecological risk, and to support vegetation.” Materials from other locations, such as waste rock and tailings, should also be evaluated for the same reasons.

The following publication recently came to our attention:
Paschke, M.W., and E.F. Redente. 2002. **Copper toxicity thresholds for important restoration grass species of the western United States. Environmental Toxicology and Chemistry 21:2692-269**7. The report provides information on copper concentrations in water that may be toxic to several species of vegetation. This may have a bearing on revegetation at the Yerington Mine, especially in light of the statement in the second paragraph of section 1.2, Previous Monitoring and Data Acquisition, that indicates that copper concentrations in previously analyzed samples of waste rock are not consistent with representative local soils concentrations (implying that they were higher). Information from previous tests of tailings using the Nevada Division of Environmental Protection Meteoric Water Mobility Procedure may be useful in determining if copper (or other elements) may hinder revegetation efforts at the Yerington Mine.

*Accordingly, please provide the **Final Cover Materials Work Plan,** which* incorporates the above comments. This information must be received not later than March 20, 2003, as per the previously agreed on submittal schedule.

Should you have any questions or if I can be of any assistance, please do not hesitate to contact me at (775) 687-9376 or FAX (775) 687-6396. All future correspondence regarding this subject should be addressed to the undersigned.

Sincerely,

Arthur G. Gravenstein, P.E.
Staff Engineer
Remediation Branch
Bureau of Corrective Action

Enclosure (1)
Attachment Memorandum From Steve M. Dean to Bonnie Arthur

ec: Ms. Jennifer Carr, NDEP
Mr. Doug Zimmerman, NDEP

Cc: w/Enclosure
Mr. Joe Sawyer, Project Manager, SRK Consulting, 102 Birch Drive, Yerington NV. 89403

Mr. Chuck Zimmerman, Senior Associate, Brown and Caldwell, 3488 Goni Road, Suite 142, Carson City, NV 89706

Mr. Chuck Pope, Deputy Assistant Field Manager, Bureau of Land Management, Carson City Field Office, 5665 Morgan Mill Road, Carson City, NV 89701

Ms. Molly Mayo, Senior Mediator, Meridian Institute, P.O. Box 1829 Dillon, CO 80435

Mr. Elwood Emm, Chairman, Yerington Paiute Tribe, 607 W. Bridge St., Yerington, NV 89447

Mr. Robert Quintero, Chairman, Walker River Paiute Tribe, P.O. Box 220, Schurz, NV 89427

Mr. Tad Williams, Environmental Director, Walker River Paiute Tribe, P.O. Box 220, Schurz, NV 89427

Mr. Stanley Wiemeyer, U.S. Department of Interior, Fish and Wildlife Service, 1340 Financial Blvd, Suite 234, Reno, NV 89502-7147

Mr. John Krause, Environmental Coordinator, Bureau of Indian Affairs, Phoenix Area Office, P.O. Box 10, Phoenix, AZ 85001

Ms. Bonnie Arthur, Project Manager, U.S. Environmental Protection Agency, Region IX, 75 Hawthorne Street, San Francisco, CA 94105

Ms. Phyllis Hunewill, Commissioner, Lyon County, 31 South Main Street, Yerington, NV 89447 Mr.

Steve Snyder, County Manager, Lyon County, 31 South Main Street, Yerington, NV 89447

Mr. Dan Newell, Manager, City of Yerington, 102 South Main Street, Yerington, NV

Mr. Bob McQuivey, Habitat Bureau Chief, Nevada Division of Wildlife, 1100 Valley Road, Reno, NV 89520

Ms. Libby Levy, 75 Hawthorne Street, San Francisco, CA 94105

Ken Paulsen, Behre Dolbear & Company, Inc., PO Box 1930, Arvada CO 80001

ATTACHMENT

January 30, 2003

MEMORANDUM

SUBJECT: Re: Anaconda Copper Mine Radiation Issues

FROM: Steve M. Dean (SFD-8-B)
Environmental Radiation Expert
Superfund Technical Support

TO: Bonnie Arthur (SFD-8-2)
Private Sites/ DOE Section

I have reviewed comments from Atlantic Richfield which claim that there are "no federal standards for either exposure or soil concentrations at inoperative non-uranium mine sites." This statement is in error. US EPA Superfund has both exposure and soil concentration criteria for radionuclides from naturally occurring radioactive materials (NORM) that can be present at non-uranium mine sites.

US EPA Superfund, under CERCLA statutory authority, has developed radionuclide soil concentration criteria that are risk based and expressed as Preliminary Remediation Goals (PRGs). PRGs for both commercial and residential scenarios exist for all NORM radionuclides that are likely to impact abandoned mines. Consequently, risk-based standards for NORM can and should be applied to any inoperative mine site.

It is possible that some inoperative mines will have site conditions that do not lend themselves to risk-based assessment. For those situations the US EPA Office of Radiation and Indoor Air (ORIA) has established an exposure limit of 15 millirem per year total effective dose equivalent (mrem/ yr TEDE) above background for radioactive contaminated sites. This requires that the impacted areas at a mine site be surveyed, at a minimum, for gamma ray emissions and that the survey data be compared to survey data from unimpacted areas near the mine site.

The determination of which characterization strategy, risk-based or dose based, is the more appropriate will depend on a case by case analysis of site specific conditions.